A FEW REMARKS

ON THE

STATE OF DISEASE

AND

SANITARY ARRANGEMENTS

IN THE

HUNDRED OF WIRRAL.

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INTRODUCTION.

The object with which this little tract has been published, is not with any idea that it contains any thing new or original, but as many things that do not possess these two qualities, may be useful and interesting, the author has been induced to hope that this tract may turn out to be both of the latter.

Another object I have had also in view, viz. that in a district possessing so many natural advantages as the district termed in sanitary statistics the Woodchurch District does, and whose yearly per centage of mortality is remarkably low, the fact that by a little care and trouble increased salubrity might be obtained, as well as increased comfort and happiness.

It will be almost needless to name that the above-mentioned district is a purely agricultural one. In a sanitary point of view it possesses advantages over several districts near Liverpool, on account of its lying to windward (our prevailing winds being mostly southerly and westerly). This is an advantage of no slight importance, as independent of the contamination of the atmosphere by smoke, and the proceeds from the different manufactories, it has been found that air which has passed over any large town, loses one of its most active and important constituents, a gas called ozone, which is oxygen existing in a state of great activity. This ozone is only found in air that has passed over the sea or the open country. It is likewise well known that this oxygen existing in this state of activity, is essential for the perfect preservation of life.

It might be inferred that the district I have here mentioned will necessarily be very healthy, and on referring to statistics we find such to be the case: for the sake of shewing this, I will give the sanitary statistics for 1857 of some of the districts in Cheshire:— Annual per centage of Birkenhead, 2·17; Wallasey, 1·80; Neston, 1·67; Woodchurch. 1·37.

It will be seen by the above statistics that the Woodchurch district possesses a very decided advantage over any of the others. All the above-mentioned districts have a mortality per centage superior to the general mortality of the United Kingdom, which is about 2·50, therefore a very great superiority exists in this part of the Woodchurch district. But while this gratifying state of mortality exists, it does not follow that even it could not be reduced by more effective sanitary arrangements; and even if this could not be effected, and I will readily admit that it is almost as low as we have any right to expect—considering that it has been so ordained, that after a comparatively brief period the body must deteriorate and degenerate, which changes constitute old age; and although they be procrastinated, and occupy a considerable time in running their course, still, eventually they must come, however long deferred. And the following quotation from an eminent author is strictly true—that "it is as natural to degenerate and die, as to be developed and live." It is evident, therefore, that a certain rate of mortality must exist, and if we suppose that rate to be at a minimum, as low as it possibly can be, it does not follow that increased comfort and happiness might not be attained by increased sanitary arrangement; for we must remember that diseases of different varieties may exist, which although not necessarily fatal, are nevertheless attended with much distress and suffering. And an important fact must not be lost sight of, viz. that the greatest mortality does not take place at advanced ages, but during the years which constitute what is termed the prime of life.

The Registrar General states, in his first quarterly report of the year, that English farmers and their families enjoy many sanitary advantages, yet they suffer from the heaps of manure which surround their houses. Young farmers of the age of 25 to 35 die at the rate of 10 in the 1000 annually, which is a slightly higher rate of mortality than is experienced by shoemakers, carpenters, bakers, grocers, miners, blacksmiths, &c. at that period of life.

Farmers in the subsequent ages of life enjoy superior health, and after 35 live 33 years on an average, as they then become less

sensible to zymotic influences, which, however, prove fatal to their children and cattle. I shall now briefly enumerate a few of the most common diseases in this locality.

FEVER.

Undoubtedly one of the most common diseases in this locality is what is usually called fever. This fever at its commencement presents no very decided characters. We should hardly be justified in styling it typhus or typhoid, and still less so pure inflammatory fever. Some subjects are more seriously affected by it than others, and if neglected it may pass into typhus, but, generally speaking, such a termination is rare.

Of late years all fevers have manifested a decided tendency to become typhoid, that is, have assumed a lower and more unhealthy character. This tendency has not been confined to diseases affecting man, but to the lower animals also. I shall have to refer to this again.

It is not my intention to mention any of the symptoms of this fever, which is pretty well known to all of you, but content myself with mentioning that such a disease does exist to a considerable extent in this locality; and this fact, taken in conjunction with the statement of the Registrar General, naturally leads us to investigate the cause.

The fever I have before mentioned is endemic, or confined to a certain place, from which it does not seem to spread; it is therefore neither contagious nor infectious, that is, so long as it retains its original characters, not having degenerated into typhus or typhoid.

The first question that may naturally be asked is, Why this variety of fever should emanate from one spot, and affect those the immediate vicinity? The answer is simple: because the in exciting cause is close at hand; and that exciting cause in this locality, and in fact in all agricultural districts, in the unwholesome and dirty state of the farm yards. The description of a surgeon practising on the east coast is fully corroborated by myself.

He says, in speaking of the farm yards and premises, "The drainage is bad; the cattle yards and sheds are brought too near the dwelling-house, in order that they may be more easily overlooked; the drainage, if any, is by the surface, into the nearest pond or ditch; the yards are filled with sodden excrement and straw; in

fact the whole arrangements are calculated inevitably to produce disease, not only to the cattle but to the tenant himself."

A few words on the theory of infection may enable most of you to understand how such causes may produce a disease such as fever.

The infective material arising from such causes as are mentioned above, is produced from decomposing organic matter, and is an organic compound "declining by successive transformations, from a highly complex form into a more simple one, or a state of oxidation." These changes are called fermentative putrefaction, and different compounds are given off, which, taken in the human system, act most deleteriously; some indeed cause a sort of fermentive process to go on in the blood itself. The way in which this is supposed to take place is as follows: the ferment taken into the blood unites itself with certain constituents of the blood, for which it seems to have a sort of affinity; and the spread of this process, and its action on the system, constitutes a regular attack of fever. Such diseases as are produced in the manner described are called, as you will see in the Registrar General's Report, zymotic, from a Greek word signifying a ferment. The effect of this poison or ferment, whether arising from animal or vegetable sources, acts as you will see from the description of its action mentioned before, just like yeast acts on the flour in the process of making bread; there we know that the yeast or ferment possesses a peculiar property of acting on certain constituents of the flour, and altering their composition; thus some of the starch contained in the flour becomes converted into sugar, and this sugar again becomes converted into alcohol, which flies away, and carbonic acid gas, which remains in the fermented mass, and causes the lightness which is peculiar to it after fermentation. The peculiar qualities exercised by the yeast seems to be the power that it possesses over all the particles of a peculiar kind contained in the whole mass of flour, and the action of the yeast does not cease till the whole mass has been acted upon.

As I have before said, such a process is supposed to take place in the human body during an attack of fever, a ferment is introduced into the blood; this acts on all the components of the blood of a certain kind, supposed to be all the azotized materials, that is, matters containing nitrogen. During the process of spreading or fermentation the fever increases, and when all the constituents have been acted upon the fever abates, leaving the patient weak and helpless. And provided the theory is correct, the reason that

persons are not generally speaking liable to a recurrence of such diseases, seems to be that the peculiar principle on which the ferment acted upon has been completely used up and exhausted.

The reason that persons in the prime of life are more susceptible of zymotic influences, seems to be that a greater quantity of azotised material exists in the blood of these persons at this period than at a later one.

Having spoken of the way in which men are affected, let me briefly mention how the lower animals suffer, for the question is not only important because it relates to the health of a large portion of the community, but because it likewise relates to the cattle which have to furnish food for all classes.

First, as regards the tendency which all diseases seem to have taken on themselves to assume a lower or more typhoid character. A veterinary surgeon of great experience says that he finds cattle although improved in form during the last twenty years, still they are less vigorous in constitution than they used to be. They have a distinct hereditary tendency to diseases of the respiratory organs; they are more easily depressed by cold and wet; and do not bear bleeding and purging as their progenitors used to do. He says the diseases he is called on to treat are less miscellaneous than they used to be, but are all of a lower type.

The disease which exists amongst cattle in this locality at the present time, manifests itself as typhoid fever, accompanied by pinulent inflammation of the lungs; and such is the rapidity and universal fatality of the disease, that every one knows if they are not speedily killed by the butcher, the farmer will have to bear their total loss.

It appears then that fever does exist amongst the lower animals as well as among men, presenting nearly similar morbid changes, and originating under precisely similar conditions, viz. under the evils of deficient ventilation, and the vicinity to animal poisons of a mixed and unwholesome character. The way to avoid such a state of things is not impossible, or as difficult as many people would imagine; and, as ventilation and cleanliness are not physical impossibilities, they are worthy of trial.

In spite of all the inventions and ingenious contrivances for ventilation that the never ceasing ingenuity of man has devised during the last few years, nothing seems equal to open windows and doors, which, simple and uncomplicated, readily understood by every one, and easily adjusted, seem to be quite equal to all that can be expected or wished. Much has been lately said and written

concerning disinfectants; all sorts of chemical combinations are in existence, commencing with the old chloride of lime, and terminating with compounds, whose power of action it is as difficult to understand as the names are difficult to pronounce. And, as in ventilation, so in disinfectants; perfect cleanliness seems to be the oldest, most simple, and most efficacious; of course under peculiar circumstances some disinfectant might be advantageously employed, always provided perfect cleanliness preceded its application. How can this cleanliness be accomplished in a farm yard? Of course such a question will be asked by many, and a satisfactory answer demanded.

Of late years scientific agriculturists and chemists have interested themselves much on the subject of farm yard manure, and the results they have arrived at seems to be as follows:—Recent manure loses weight by lying in the farm yard. The moisture evaporates, and the volatile matters, which are very valuable, escape by fermentation and are lost. By the time the straw is half rotton the loss amounts to one-fourth of the original weight; if the manure is allowed to stand longer the loss increases, till the loss is nearly or quite the half of the original weight. Of course a very considerable loss takes place when the liquid manure is allowed to run away to waste, or when it is allowed to stand in pools and ferment, or when the manure has been allowed to be exposed to the washing of the rain.

The immediate and most sensitive action of animal and vegetable manures depends on the amount of nitrogen and saline matters they contain. By standing and allowing fermentation to ensue, the ammonia, and therefore the nitrogen—for ammonia is only a compound of two gases, nitrogen and hydrogen—is diminished; and by allowing the rain to wet the manure, the saline matters are carried away and lost.

To try and reduce what I have endeavoured to prove to practical results, and therefore to some use, let me suggest that the manure heaps be kept from the dwelling as far as they possibly can, consistent with convenience and economy: and that in all cases when the ploughing in of long or recent manure is advantageous, it be adopted. Let me briefly mention a few such cases. Stiff land is benefited by the opening tendency of long or recent manure; while the benefit which generally follows from allowing the fermentation to take place in the soil rather than in the farm yard, is that the products of the decomposition are taken up by the soil, and nothing is lost. Under these circumstances the

land is more enriched, and the crops more benefited. In some soils the recent manure ploughed in in autumn, is found to produce better crops of corn, which followed it either in winter or spring, than a proportionate quantity of the fermented manure.

Lastly, it is needless to comment on the advantages to be derived from the use of tanks to preserve the drainings and washings which naturally contain the most important matters, and which would otherwise run to waste and become a nuisance and positively injurious to all, both to the farmer himself and his cattle; for the cattle are exposed to the risk of drinking water contaminated with such matters, and experience has shown that this cannot always be done with impunity, as it is necessarily attended with fatal results.

The late Principal Harris, speaking on the subject, says, "the principle is about as rational to retain the grains after brewing, and allow the strong ale to run to waste."

As regards the diseases of cattle, cleanliness in the shippon is absolutely indispensable for healthy products to be produced by the animal. As comparatively few farmers insure their cattle on account of the premium being so high, it would be desirable that some portion of that premium should be annually set aside for white-washing, &c., and I am convinced it would thoroughly compensate for the outlay and trouble; and if the disease was not entirely stayed, still it might be materially lessened.

As an example of the advantages of animals being kept clean while they were being fattened, I may mention a case that is well authenticated, where six pigs were kept: all were fed alike; three were curry-combed and well looked after, and the other three were left to themselves. After the expiration of seven weeks the former had consumed seven bushels of peas less than the latter, and yet weighed two stone four pounds more. Such an example needs no comment, and undoubtedly the additional trouble was well compensated for.

I may close my remarks on this subject by stating that it does not necessarily follow that that occupation which is the most ancient and the most important—for nothing can be of greater importance than the production of food—should be carried on under circumstances decidedly prejudicial to health, decidedly uneconomical, and decidedly unsightly and unpleasant.

RHEUMATISM.

Unfortunately this is one of the most common diseases in this locality, as it is in fact everywhere else in our country. It has been well described as being common, painful, and obstinate. As regards the first it is strictly true, as it is nearly universal; all who have suffered can speak of the pain of it, and the medical practitioner can speak to the obstinate perseverance with which it baffles all the efforts made to effect a cure.

The variety of Rheumatism on which I purpose to make a few remarks, will be the Chronic, or Rheumatism of long standing. The acute variety, or, as it is commonly called, Rheumatic Fever, is a disease of such severity, and attended, by reason of complication that may ensue, with great danger to life, that the treatment of this disease falls entirely into the hands of those who have made medicine their sole study.

Chronic Rheumatism on the contrary presents no dangerous symptoms, none requiring active treatment; it amounts generally speaking, at its worst, to merely inconvenience; year by year this increases, till almost imperceptibly, by reason of its tardy approach, the victim of its attacks may be rendered helpless as a child.

A knowledge of a disease so common may, to some readers, be not only interesting, but even useful; and I shall endeavour, as plainly as I can, to try and explain the exciting causes of this well-known complaint.

Exposure to cold is considered by the community at large to be the most common, if not the only cause of this disease, and they consider that the effect of this cold is manifested by its local action, not by its effects on the general nourishment of the body. The way exposure to cold acts, is by exerting so depressing an influence over the system that the proper functions of assimilation are not properly carried on. The process of assimilation may be briefly explained as follows:—The food having assumed the soluble form by the action of the stomach and various digestive organs upon it, is taken into the circulation, and then used for purposes of respiration and the nutrition of the body. If this process of assimilation is not properly performed, the products that are formed will not be fitted to discharge their respective duties; nor is this all, but products are formed which amount to actual poisons in the effect they produce on the system. Rheumatism is the result of a product of this nature, and the presence of this poison in this disease has been clearly demonstrated. As regards the formation of this poison, it may be originated in the system by means of the

depressing action of cold, over-anxiety of mind, and over-fatigue of body; in fact, by any thing that keeps up a long continued depressing action on the powers of life. But most commonly a predisposition exists; he knows that certain diseases are what is called hereditary, that is, capable of being handed down from father to son; perhaps no better example exists than those of Gout and Rheumatism, which are closely allied to each other. A person with such a tendency or predisposition will generally find that he is liable to derangements of his digestive apparatus, apparently from trifling causes. He is peculiarly sensitive to changes in the weather; an east wind will cause him to complain of wandering pains; in fact, any depressing influence will bring on these, and they are only relieved by removing the depressing influence, and giving tone to the system by tonics and shower baths. A person such as has been described, commonly has a tendency to perspire on exertion, and the perspiration is generally of an acid nature; it will be readily understood how the suppression of this excretion of the skin, which carries away the poisonous matter, will act most prejudicially on such a subject.

During adult life, or between fifteen and thirty years of age, when the destruction and re-formation of tissues is going on in the body with great activity, it follows that if these are not carried on so that healthy products are obtained, and in a subject with a predisposition to Rheumatism, an abundant formation of the rheumatic poison will result, and the consequence will be that an attack of Rheumatic Fever will inevitably follow. But in more mature age, although the processes of assimilation are more liable to be deranged, still, as the processes of nutrition are not going on so actively as in youth, the formation of the poison is not so abundant, and the result is that the disease assumes what is denominated the chronic form.

It may be asked to what object has this description of the disease been advanced. I contend that a person is more inclined to carry out instructions the object of which he can clearly see, than when he is merely advised to do such and such things, not knowing why and wherefore. And it too commonly happens that persons having received advice which they fancy will prove beneficial, and which requires to be acted up to with perseverance and patience, get tired at seeing no marked improvement ensue; and from the want of not knowing the object of doing certain things give them up, and thereby throw away their only chance of recovery. There is a very old adage to the effect that "prevention is better than cure," and to no disease is this more applicable than to Rheumatism, and especially to Chronic Rheumatism.

If the disease is caused by the processes of digestion not being carried on efficiently, it naturally follows that the only way to prevent its occurrence will be to put these in the most efficient state for performing their functions, and keeping them so. Among the upper classes the great cause of derangement of digestion is over-feeding and want of exercise; the opposite condition exists among the poor—insufficient food and over-work. With regard to the former, plain moderate eating and drinking, and moderate exercise, the benefits of which are so well known that I shall say very little about them, with this exception, that I believe with the physician who stated that "he believed every stomach, not actually impaired by organic disease, will perform its functions if it receive reasonable attention." Professor Caldwell, of the United States, says in his essays that "intemperance in eating is perhaps the most universal fault we commit. We are guilty of it not occasionally but habitually, and almost uniformly from the cradle to the grave. It is the bane alike of our infancy and youth, our maturity and old age. It is infinitely more common than intemperance in drinking, and the aggregate of mischief it does is greater." Undoubtedly this is strong language, but I am afraid among certain classes nevertheless true, from the mixture of different kinds of food, and the excess of quantity, which is more prejudicial than that of quality; for many things if taken in proper quantity would agree, whereas, if not so, act just the reverse. No precise rule can be laid down on these subjects, and every person knows best what agrees and disagrees with them, and also what quantity suffices for the requirements of nature.

I am convinced that in such cases no treatment can be more beneficial than the Hydropathic or water treatment. When proper dieting, regular meals, pure air, beautiful scenery, relaxation from over-anxiety of mind or over-fatigue of body, all these, combined with the avoidance of stimulants and the use of copious dilutents, act most beneficially in chronic diseases originating from such causes as I have previously mentioned.

I have before observed that the opposite state to the one described exists among the poorer classes, and, as "necessity knows no law," so little can be said on this subject, excepting that the endeavour of the poor man should be to get the most nutritious food that lays in his power, which I think is not always done. The substitution of milk for the everlasting tea and coffee, which is generally of a very watery consistence, would be decidedly more wholesome and nutritious. The advice to avoid unnecessary exposure is not wholly uncalled for; for it is very common to see the workman recklessly exposing himself to rain without even the protection of his coat. The use of flannel, which

in our climate is indispensable for all; and lastly, the keeping the skin in such a state that it can perform its proper office efficiently and with benefit to the perfect preservation of health, which should be the object of every man.

If the proper action of the skin be not secured by cleanliness and warm clothing, the proper excretions of waste material cannot go on, and they become retained in the blood, and the digestive powers and all the powers of the constitution equally suffer. All these simple and well known precautions, taken together and applied, constitute the only preventitive for the most common, painful, and most obstinate disease we are acquainted with; and I am convinced that he who will take advice in time, especially if he knows that a predisposition exists for this particular complaint, will find that for trouble and the inconvenience he has put himself to he has been well rewarded.

ON THE USE AND ABUSE OF INTOXICATING LIQUORS.

This is a subject which is deeply interesting to all classes, not only on account of the extensive use of intoxicating liquors, but also on account of the great abuse which exists in the use of them.

We are told by those who can remember 50 or 60 years ago, to what an extent the use of wine and spirits was carried to among the higher classes, and Macauley, the historian, describing the country gentleman of the last century, says, "the table was loaded with coarse plenty, and his guests were cordially welcome to it; but as the habit of drinking to excess was general in the class to which he belonged, and as his fortune did not enable him to intoxicate large assemblies with claret, strong beer was the ordinary beverage." The quantity of beer consumed in those days was truly enormous. At dinner the ladies retired as soon as the dishes were removed, and left the gentlemen to their ale and tobacco; the coarse jollity of the afternoon being often prolonged till the revellers were laid under the table. Mr. Thackeray, the popular author and lecturer, speaking of the period, and its manners and customs, relates an anecdote of a bishop who had some very choice claret that he wished to remove, and happening to ask a gentleman who was acquainted with such things, how it could best be accomplished,—"How much have you?" asked the gentleman. "Twelve dozen," said the bishop; "Then the matter is very easy, you have only to ask me to dinner twelve times, and I will remove it all

myself." Such anecdotes might be cited by scores, but I have quoted this because it has been mentioned by one of the most popular authors of the day, who has related it when lecturing on the customs of the period I mentioned. Happily this fashion, for fashion it can only be called, has like many others disappeared, and I think we may safely say that we find the upper and middle classes decidedly abstemious, at least compared with the period which I have just alluded to. While on the other hand it cannot be denied that the poorer classes, whose wages in large towns have increased so much of late years, bearing no proportion to the increase in the price of provisions, now use articles of diet—luxuries in fact—which a few years back it would have been impossible for them to have obtained. If the evil only rested here we should have little indeed to complain of; but unfortunately, the higher the wages the greater the expenditure in intoxicating liquors; and we but too frequently find that a man whose weekly earnings would enable him to be well housed, well clad, and well fed, and to keep himself and family comfortably and respectably, living from hand to mouth, his house almost unfurnished, his children dirty and half famished, and his wife—she whom he had promised to love—dragging on a wretched existence, in dirt, famine, and degredation. Such cases are by no means exceptional ones, but on the contrary amount to nearly the rule among our labouring classes in large towns: thus we find that in the town of Liverpool alone, 1,000 beer houses and 1,400 wine and spirit vaults exist; and as these are for the most part supported by the working classes, we must be forcibly impressed that the amount of money expended, and the consumption of the liquors, must be truly enormous.

The consumption of some form of alcohol seems to be universal. In our country we have nearly every variety of it—brandy, whiskey, rum, gin, and every variety of wine and beer.

In France and the Continent of Europe, light wine is the beverage most commonly used. In Russia they prepare rye beer, which is described as being a sharp, acid, and muddy drink.

The Tartars drink millet beer, which is prepared from the millet seed. The Arabs prepare beer from mare's milk; it is described as being an agreeable drink, possessing a slightly exhilarating effect, hardly amounting to intoxication, and not followed by the evil effects of other intoxicating liquors. In South America maize beer is consumed by the natives in vast quantities, scarcely a single hut being without its jar of the favorite liquor. The process of preparation is original and simple; the Indian corn is allowed to sprout and becomes malt. The malt is chewed, all the members of the family assisting in

this operation, good teeth are therefore highly desirable. The chewed malt is then allowed to ferment. The cottager in these parts cannot offer his guests a greater treat than a draught of this beer, the ingredients of which have been ground between his own teeth.

In Arva they drink a liquor called arva, which is made from a plant similarly named; it is described as being in taste somewhat like rhubarb and magnesia, but notwithstanding this the natives seem to relish it amazingly. Even in Siberia, cold and miserable though the country may be, still the natives manage to get drunk. They make an intoxicating drink from a kind of mushroom, which produces all the effects of alcohol.

In fact, alcohol can be produced, and is produced, everywhere, and there seems to be no limit to its production; and if other means failed it could easily be produced from substances now never thought of, because it can be produced more cheaply from other sources. Wherever starch exists, as it does in potatoes, rice, &c., it can be readily converted into grape sugar, and then into alcohol, and instead of starch, woody fibre, paper, raw cotton, flax, and even sawdust might be used, and after being converted into starch by the action of oil of vitriol, might readily be converted into sugar, and then allowed to ferment and become alcohol.

After having explained its universal use, and the facility of its production, I shall speak of its effects. Like everything else, when used in moderation there can be no objection to it. The young and robust could of course do without it, but so long as due discretion is observed, I can see no reason why they should be deprived of an article that certainly conduces to the enjoyment of life. To weak and sickly persons, in many instances, it is not only useful but imperatively demanded. When I advocate the moderate use of it as a luxury, my remarks refer only to those whose position, in a pecuniary point of view, the use of it deprives of no article of diet or clothing absolutely necessary. With the labouring classes such is never the case; consequently, it is highly desirable that total abstinence from it should be advised. For, no matter how high the wages of the artizan, food and clothing, combined with house rent and the education of his children, if properly performed, can leave nothing to spend in such luxuries; and the use of them leads him into society, and, however strong at first his powers of self-denial may be, too often entice him to commit excesses which he would never have believed himself capable of doing.

Let me now speak of the excessive use or abuse of alcohol. Drunkenness is not like some other vices peculiar to modern times. It is

handed down to us from "hoar antiquity." The cases of Noah and Lot, recorded in the Bible, are the earliest on record, and both occurred in the infancy of society. Wherever the grape flourished, drunkenness prevailed. The formation of wine from fruit was one of the earliest discoveries.

It may not be uninteresting to point out some of the most frequent causes of drunkenness. There are some persons who will never become drunkards, and some that will in spite of all that can be done to prevent them. This, in some persons, amounts to insanity, and a form of it is well known and recognised under the name of vino-mania.

There are drunkards by choice, and drunkards by necessity. The former are of course unintellectual minds, and of low animal propensities. They delight in roar and riot. The drunkard by necessity was never meant by nature to be dissipated. He is generally a person of partial mental weakness, and when misfortunes have overtaken him, instead of bearing up manfully against them, endeavours, for it is but an endeavour, to drown his sorrows in liquor. Such a man frequently dies broken-hearted, before his excesses have had time to destroy him.

Some have become drunkards from excess of indulgence in youth, others by frequenting clubs and Masonic lodges. Men of genius are often unfortunately addicted to drinking. Their minds possess a sensibility which, if misfortune overtakes them, tends often to make them melancholy, and they have recourse to stimulants to rouse their spirits.

Perhaps the most extraordinary case of this vino-mania is presented in the case of the periodical drunkard, and I know one or two good specimens in my own practice. In these cases a certain desire for getting drunk comes on two or three times a year, and at these times the persons so afflicted will drink almost any kind of intoxicating liquor with the greatest avidity. After a period ranging from a week to two or three weeks, the fit entirely passes away, and they become peaceful and well-conducted members of society, often remarkably so, till another attack makes its appearance.

What are the effects produced by the excessive use of intoxicating liquors? All the organs which constitute the human body suffer more or less, but three principally. These are the liver, stomach, and brain. In speaking of the first, I may say that in London a certain disease of this organ is so common as to have received the name of gin drinker's liver, and the consequences of such a disease are truly appaling—defective digestion, jaundice, the free passage of the blood

is impeded, dropsy takes place, vomiting, and sufferings of every description now make their appearance, and in a short time death closes the scene.

Nor is the condition of the stomach much better. It becomes thickened, and eventually completely disorganised. The appetite fails, bilious attacks become frequent, the eye becomes congested and yellow, the body becomes emaciated, and becomes the fac-simile of Shakespeare's "lean and slippered pantaloon." Premature age is the inevitable result, and no lack of example may be met with on an evening in large towns in any part of Great Britain, where we may see human beings feeble, tottering, with sunken eyes, whose years can scarcely number fifty, presenting all the outward appearance of fourscore.

It will readily be surmised that the use of intoxicating liquors must produce most disastrous results on that most delicate structure of all—the brain, and experience fully bears this out. It has been computed that nearly one-half of the inmates of our asylums owe their madness to drinking. In 110 cases of insanity admitted into the Hanwell Asylum in 1840, no less than thirty-one were ascribed to intemperance, while thirty-four were referred to combined causes, of which intemperance was stated to be one. It is remarkable that of seventy females admitted during the same year, only four cases were ascribed to intemperance.

The evil does not cease here, but we find that posterity suffers to a most frightful extent; for the children of such parents are, in many instances, idiotic; or if not affected to such an extent as this, have their constitutions rendered more liable to afflicting diseases, and their minds decidedly impaired. There can be no doubt that madness has been greatly on the increase among the poorer classes during the last few years, and it can only be referred to the great increase in the use of intoxicating liquors among the poorer classes. Looking at the deteriorating and afflicting influence which the abuse of alcohol has on the physical constitution only, we should naturally feel inclined to avoid putting ourselves in such a position as to render us liable to be led into temptatation; and I am convinced that the only way that this can be accomplished is to abstain from its use entirely. It has been stated that 60,000 of our fellow-countrymen are annually murdered and swept into eternity by the abuse of intoxicating liquors: surely this is a frightful fact, and one that must make the most lethargic arouse himself to consider the question attentively. But the 60,000 who die and pass away constitute but a small proportion

of the evil. Mr. Poynter, for three years Under Sheriff of London, says, "I have long been in the habit of hearing criminals refer all their misery to drinking, so that I now almost cease to ask them the cause of their ruin. The evil lies at the root of all other evils of this city and elsewhere. Nearly all the convicts for murder with whom I have conversed, have admitted themselves to have been under the influence of liquor when they committed the act." Judge Hales says, "By due observation of nearly twenty years, I have found that if the murders and manslaughters, the burglaries and robberies, and riots and tumults, the adulteries and fornications, and other great enormities that have happened in that time were divided into five parts, four of them have been the issues and product of excessive drinking, of tavern and ale-house meetings."

In concluding this subject let me say a few words on the amount of consumption of ardent spirits in the United Kingdom. In the year ending January, 1854, 25,000,000 gallons were distilled and consumed, and as the population is under 30,000,000, it follows that nearly a gallon of ardent spirits is consumed by every man, woman, and child in the United Kingdom; but this is not all, we have not taken into consideration the consumption of ale and beer. The late James Johnson has drawn up some tables, and he says, "In 1852, 30,000,000 bushels of malt were used in England alone in the making of ale and beer." And he states that as a bushel of malt yields two gallons of proof spirit, therefore if all the malt had been made into whisky it would have yielded the enormous quantity of 60,000,000 of gallons. It would be easy to calculate the cost of this, and we may rest assured that it would be very great; and when we consider that the greater part of this is consumed by the labouring classes—for I have only spoken of the consumption of ale and spirits, and have not referred to wine—we must be forcibly impressed that a very large sum of money must year by year be expended by those classes, which, if rightly applied, would tend to make many a heart more light, and many a fire-side more comfortable.

CHOLERA.

In concluding this little tract it may not be uninteresting to some readers to give a brief account of the history and nature of cholera, and the preventitives against it; and I think at no time can this subject be more appropriately noticed than at the present, as it seems by no means improbable that before long we shall receive another visit from this terrible affliction.

During the last great epidemic of cholera which occurred in 1849, the deaths in England and Wales amounted to 53,293; and as we find that the mortality increases in direct proportion to the density of population, we must naturally expect a greater mortality at each subsequent visitation, the epidemic of course bearing the same characters and the sanitary and preventitive measures not being improved, which I am sorry to say in very many instances is the case, and in no instance better marked than the villages existing in the Hundred of Wirral. That this is much to be deplored will readily be admitted by all; and the wonder is, that though so readily admitted, and as the several townships have the power of electing an officer with full authority to remove all nuisances, and whose duties should be to look after the sanitary arrangements of the township to which he may be appointed, that in no single instance in this district with which I am acquainted has the late Act of Parliament been complied with, the consequence of which is, that the sanitary arrangements in most of our villages are in a very deplorable condition. By which neglect any disease having the power of propagating itself when placed under certain advantageous circumstances, such for example as the presence of dirt, bad ventilation, over-crowding of dwellings, &c., finds most villages a perfect hot-bed; and what under ordinary circumstances would have been rendered perfectly harmless, under the beforementioned influences increases tenfold, and acquires greater virulence.

I have before mentioned that as the density of population increases so the mortality increases; the subjoined table, taken from the Registrar-General's report, shows this most clearly :—

Inhabitants to a square mile...	308	—Mortality	30	in 10,000
,, ,, ...	915	,,	65	in 10,000
,, ,, ...	235	,,	7	in 10,000

I shall now proceed to give a brief account of the progress of cholera over the globe and through England. The progress which this disease makes—sometimes progressing with great rapidity (but in no case greater than that with which men travel in the present day, aided by steam and the different adjurants to travelling), sometimes being retarded for a considerable period—presents many facts for serious reflection.

The earliest and most authentic accounts report that cholera having originated in the different countries lying between the Delta of the Ganges, spread over the valley of the Lower Ganges, in 1817, and reached Bombay in August, 1818. In 1821, it arrived at Muscat, at the mouth of the Persian Gulf, and arrived at Turkey in 1822. In the year 1823, it passed the Caspian Sea, and arrived at Astracan. From

this point it made no further progress in Europe till 1830, when it rapidly reached Moscow, Riga, and St. Petersburg, and finally Sunderland, in the month of November, in the year 1831.

It will readily be seen by the above account that its progress has sometimes been accelerated and sometimes decreased. In some instances these peculiarities can be accounted for by reason of severe frost having set in, and the nature of the country, the progress of the disease being decidedly impeded by mountains and sometimes by seas and oceans, but not in every instance, as in some cases where traffic is carried on actively the disease has got over these physical obstructions with the greatest rapidity.

The disease has always a decided tendency to move along the banks of rivers, and the low damp districts in their immediate neighbourhood. This is easily acconnted for, and to use Mr. Jameson's remarks, who says "It is to be recollected that in India, as in all other countries, the inhabitants flock to the neighbourhood of rivers for the purposes of commerce, and that the greatest number of towns and cities will thus be found near navigable streams. It is perfectly plain, that the population being more thickly gathered in such situations, must always suffer more on occasion of any great mortality, than more thinly inhabited portions of the country." But another reason exists, and one equally strong. The vicinage of rivers, from the action of the sun upon the great body of water contained in their beds during the day, and from the influence of the water upon the surrounding air during the night, must always be peculiarly subject to those vicissitudes of temperature which are known so powerfully to influence the state of this epidemic. To which, if we add their low, muddy, sedgy banks, and the other numerous sources of miasma usually found in their confines, we shall be at no loss to account for the great sickliness of those residing on their banks, without searching for any more hidden causes of the fact.

If we glance at the origin of cholera in England, we shall clearly see that very satisfactory proof exists of the importation of this disease from other countries. The disease, as we have before stated, first appeared at Sunderland, in 1831, and was preceded by the arrival of ships from different ports of the Baltic, and the persons first attacked resided on the quay. In the year 1848, the same fact was noticed at Sunderland.

At Hull, in 1848, the disease was preceded by the arrival of a ship from Hamburgh, which was at that time an infected port. Dr. Parks, of London, gives an able account of its origin in London. A seaman arrived at that port from Hamburgh on the 18th or 19th of September,

and died on the 22d of the same month. One or two persons who slept in the some room with the affected man were attacked, but recovered. During the next week there were 26 cases, all but 4 fatal; and 18 of them occurred on the river, or close to its banks, between Woolwich and Chelsea, near where the man first attacked had resided. Nearly the same facts are related by Dr. Simpson, of Edinburgh. Cholera broke out at Edinburgh on Wednesday, Oct. 4, 1848. On the Wednesday before this, three pilots went down to the Isle of May to look for vessels. One of them was taken on board a vessel from Cronstadt, bound to Leith. The other two men remained in their boat, on the lee side of the vessel, and were towed to Leith, a distance of about 25 miles. Both of these men were attacked on their passage with diarrhœa, and one of them died on Sunday of cholera. During the next week several cases occurred and continued to spread. These facts may be increased by mentioning that the outbreak occurred in a manner somewhat alike at Dublin, the disease in this instance being imported from Edinburgh. In North America the disease first appeared at Quebec, caused by the arrival of an emigrant ship from Ireland, which had lost 39 passengers out of 139 on her passage. At New York the disease was imported by German and French emigrants, from a ship from Havre. At New Orleans cases of a similar nature occurred.

These facts which I have at some length brought forward, go to prove that the disease did not in these several instances owe its origin to having been communicated by currents of air coming from infected ports, but by the direct transmission from man to man. A strong fact against the supposition that the disease is always diffused by winds, exists in the fact that the disease has been known to travel for months together in the teeth of the Indian monsoon.

It may be asked, What is the nature of the cholera poison? So far as this question has been investigated, it seems most probable that the poison does not exist in a gaseous state, but in a material state. A gas soon becomes diffused and dissipated through the air, while the cause of cholera remains many days, producing its effects in one limited spot. It must on this assumption be supposed rather to have the form of minute solid or liquid particles, which may become fixed by attaching themselves to the surfaces of other bodies. It likewise seems most probable that density of population and activity in trade has a decided tendency to propagate it. The marked preference of cholera for low unhealthy sites and crowded dirty dwellings, suggests at once the inference that the cause of the disease, whatever its nature, finds these conditions most suitable for its increase and

action. No doubt exists that the disease is much influenced by different states of the weather. A high temperature has a decided tendency to its increase, and a low one just the contrary. A stagnant state of the atmosphere has seemed to cause or keep up the disease, while rapid movement of the same has sometimes appeared to remove it, or check its progress.

The account given by Dr. Smart of this disease in the Crimea, during the late war, is very interesting, and shows how different circumstances tend to modify and alter its progress. He states, "On the night of landing, the troops were exposed to a drenching rain. During the march to Sebastopol, they lay without shelter on the ground, exposed to the night dews, so abundantly deposited at that season of the year. Of necessity they were rationed on salt meats, which excited thirst, and as no pure water was to be found, and indeed little of any kind, they eagerly ate the unripe grapes that grew plentifully along the line of march. After that fatiguing morning's advance, and the hard-fought day of Alma, they bivouaced on the field they had won; and on the second day after the battle, the epidemic broke out. The renewed march, and the busy preparation for the siege, and the sustaining excitement of high hopes of a speedy favourable termination of the bombardment, served to restrain the ravages of the disease, and to prevent its again assuming epidemic characters, although scattered cases were always present in the camp, and the great proportion of officers at the time attacked was very remarkable."

This incident seemed to disclose the reason of the exemption of officers from cholera in garrisons, where they use a generous diet; since where they were undergoing the same privations as the private soldier, living on a bare diet, and subject to equal fatigue, there was to them no such immunity from epidemic disease, but rather an increased liability to it.

After the great gale which occurred on the 14th of November, which diminished the resources of the army in food, clothing, and ammunition—and these evils being increased by the sudden accession of cold and damp weather, which destroyed the roads, and prevented frequent communication with the port,—under these circumstances, the previously concealed effects of the long continuance of a diet deficient in many of the principals of healthy food, made themselves known with redoubled energy and by sudden outbreak. From the first week of December to the first of February, the embarkation of sick at Balaklava was about one thousand a week.

From this time the cholera began to abate: it seemed as if the

disease did not find in the bodies of men, whose systems had undergone changes from conditions existing in the camp, that material requisite to the reception and development of its essential germs.

But it was otherwise with men who arrived in the scene with unvitiated constitutions, as almost every new regiment that landed at Balaklava in the winter suffered from cholera with collapse very shortly after landing. The troops who had become as it were cholera-proof became little gainers by the change, for camp dysentery took its place, leading, with slower steps but with equal certainty, to the grave.

Let me now make a few remarks on the Preventive Measures which should be used to guard against so terrible a foe; and if we cannot entirely prevent its appearance, we can most assuredly mitigate its terrible effects.

From among the great features of a Cholera Epidemic, three stand first as of paramount importance: one, the undoubted influence of locality, and of the sanitary condition of towns and dwellings, on the degree of severity with which the epidemic visits them; a second, the equally certain influence of season and temperature, together with some unknown condition of the atmosphere, on the general prevalence and rate of extension of the epidemic; and a third, the share taken by human intercourse in determining not only the progress of the epidemic, and the direction of its advance, but its extension from continent to continent, and most probably its communication from one town to another in the same country, and from one locality to another in the same town.

Let us consider the first of these undisputed features of the disease. It is granted that the power of the disease is increased in proportion to the degree of insalubrity existing in the place affected: now this does not only affect the poor, who live in the spots where moisture and foul air feed the cause of the disease, but all the inhabitants, rich and poor, are exposed to the risk of becoming affected; for it is certain that the more intensely the epidemic prevails in a large town, in like proportion does it affect the surrounding country for miles.

Much may be done everywhere, both in the town and country, to improve drainage, promote the free circulation of air, and what is of great importance in country villages, removing filth and decomposing matter which, in too many villages, is unhappily to be found to a great extent; by improving the dwellings of the poor, and providing them with a plentiful supply of pure water: and it is almost impossible to overestimate the advantages to be derived from the last-named. As an example of the fact that water is frequently the vehicle of disease, and, in this case, of a disease which in this locality is decidedly on the

increase, I may mention an anecdote related by Dr. Hawksley, which occurred to the late Rev. Dr. Gilly, of London, "who, being desirous, on his preferment to an elevated post in the Church, to leave behind him some token of his affection for the poor of his flock, took first to his counsel the medical man of the parish, who advised him neither to leave a store of port wine, nor of porter, to resuscitate the poor convalescents from ague, for the disease existed in the place and was its constant scourge, but to build them a deep well to supply them with pure water. The well was built, the water was used in preference to the shallower springs and surface water, and from that time ague ceased in that district.

In a crowded population, like that of England and Wales, it is impossible to over-rate the importance of the study of sanitary science.

Lord Stanley, on a late occasion, said "Dry and unattractive as sanitary studies may appear, they belong to the patriot no less than to the philanthropist; they touch very nearly the future prosperity and the national greatness of England." Do not fancy that the mischief done by disease spreading through the community is to be measured by the number of deaths that ensue. This is the least part of the result. As in a battle, the killed bear but a small proportion to the wounded. It is not merely by the crowded hospitals, the frequent funerals, the destitution of families, or the increased pressure of public burdens, that you may test the suffering of a nation over which sickness has passed. The real and lasting injury lies in the deterioration of the race, in the seeds of disease transmitted to future generations, in the degeneracy and decay which are never detected till the evil is irreparable, and of which, even then, the cause is often undiscovered. It concerns us, if the work of England be that of colonization and of dominion abroad; if wild hordes and savage races are to be brought by our agency under the influence of civilized man; if we are to maintain peace, to extend commerce, to hold our own among many rivals, alike by arts and arms; it concerns us, I say, that strong hands shall be forthcoming to wield either sword or spade—that vigorous constitutions be not wanting to endure the vicissitudes of climate and the labours of a settler in a new country.

I believe, whatever exceptions may be found in individual instances, when you come to deal with men in the mass, physical and moral decay necessarily go together; and it would be small satisfaction to know that we had, through a series of ages, successfully resisted every external agency, if we learnt too late, that the vigour and energy for which ours stands pre-eminent among the races of the world, were being undermined by a secret but irresistible agency, the offspring of

our own neglect, against which science and humanity had warned us in vain.

As an example of the difference of mortality existing in different localities of the same town, I may mention that the yearly mortality in Vauxhall Ward, in Liverpool, is thirty-nine in every thousand inhabitants, and the rate of mortality in Rodney-street Ward is not more than twenty-two in the same number. This is certainly a very great difference; but some allowance must be made for the difference of the respective positions of the inhabitants in society, the former being much poorer than the latter, and therefore more liable to disease, and when attacked having fewer resources to fall back upon. Nevertheless, a very striking difference does exist, and it must be attributed in a very great measure to the difference in position and general sanitary arrangements. It is a gratifying fact that Liverpool, instead of being, as it used to be, one of the most unhealthy towns in the kingdom, is fast rising to be considered one of the most healthy.

As an example of what may be done by taking due care and precaution in the prevention of propagating disease, I may mention that in 1849 cholera broke out in a most malignant form in the common lodging-houses in one particular locality in South Shields. The inmates nearly all perished on that occasion, and the police were obliged to burn the furniture and shut the houses up to prevent the epidemic spreading. A short time previous to the appearance of cholera in 1853, in Newcastle-on-Tyne, those lodging-houses were brought under the Common Lodging-house Act: they were licensed, the number of inmates limited, and they were inspected nightly by the police. The result was most striking. Other dwellings were visited by the cholera in 1853 in this locality and other poor districts of South Shields, and several of their inmates perished; but during the whole of the fearful autumn of 1853, and though scores of poverty-stricken people came direct from the worst-infected districts of Newcastle to lodge, not a single death occurred in any of the common lodging-houses of South Shields from cholera.

As regards the second fact, viz. the influence of season and temperature on the disease. In winter the diffusion of the disease takes place slowly, and perhaps is only propagated by human intercourse. The disease therefore becomes limited to a few localities; but whenever cases of cholera occur in the winter, all the means of purification possible should be put in force immediately; for we may feel certain that if the disease be allowed to maintain itself in a single district during the winter and spring, it will most probably increase

there, and soon spread widely, in spite of all efforts to restrain it, in the ensuing summer. As regards the influence of temperature on the disease, free ventilation is, perhaps, the most efficient means of destroying cholera poison, especially in winter, for there is reason to believe that in fresh cold air the poisonous matter soon becomes inert.

The removal of all obvious dirt, and the thorough cleansing of every surface of wall, floor, and ceiling, with the unsparing application of lime and other disinfectants, the washing of furniture, and the destruction of old clothes, constitute the means of prevention which are accessible to all, and if systematically adopted would be attended with incalculable benefits.

The third fact noticed in the history of cholera is one perhaps capable of being more fully proved than the other two, but unhappily we have fewer means at our disposal to obviate it. The prevention of the spreading of any disease by artificial measures in a large commercial community like that of Great Britain, is clearly impossible. In the first place, the nation will not tolerate any restrictions to commerce on a large scale; and in the second, means can be always found to evade such, and even if only one or two succeed in so doing, the disease will be established. It therefore behoves us to try and find out some measure established on a sure and more stable foundation, and these measures are the proper observance of all sanitary arrangements, most of which have already been enumerated.

Lastly, in conclusion, let me make a few remarks on the influence of the habits in predisposing to the disease. Abundant evidence was afforded during the late epidemic that habitual drunkards were highly predisposed to cholera, and of them a large number perished. The depression of the nervous system, and the derangement of the digestive organs following immediately upon occasional intoxication, had apparently a marked predisposing influence. In the Registrar General's Report, it is shown that there were certain days in the week in which the deaths from cholera were far above the average. These days were Monday and Tuesday. In the whole country Tuesday was the most fatal day, Friday the least.

"Occasional excesses," says Mr. Grainger, "led to a vast number of attacks. Thus, at Hamburgh, it was observed that there was among the sailors in that great port a regular accession of cholera every Monday and Tuesday, owing to the men going ashore and getting drunk on the preceding Sunday.

Such well-established facts should be sufficient to warn us that any excess either in eating or drinking will not be tolerated during the

prevalence of an epidemic of cholera. But we must be cautious on the other hand not to abstain unnecessarily from any articles of diet that we are in the habit of using; for we may rest assured that the nearer we keep ourselves to our accustomed state of health, the less liable are we to be attacked, and if attacked, the better chance there is of our recovery.

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